

REMARKS

Upon entry of the amendments, claims 1-8 will be pending in the application. Applicants provide the following comments to the recent Office Action.

Amendment

Applicants have amended claim 1 to delete the reference to the specific particle amounts in the initial toner. Applicants note that the Examiner previously indicated such a limitation would be indefinite. However, upon careful consideration Applicants dispute the basis of the former 112 rejection.

Applicants' invention is a replenishment toner having a certain particle size that is 1.5 to 3.5 times the amount of the particle in the initial toner. This is utterly different from setting forth that the "replenishment toner contains 0.75 to 5.25% by volume of toner particles with diameters of 5.04 μm or smaller".

The content of the toner particles with the claimed diameter is determined relative to the content of the toner particles with the relevant diameter in the initial toner. The claim language is broad, but it is not indefinite. It is well known in the art that a given type of initial toner is supposed to be used with a given model of copier or printer. Hence, there is no need to specify every single percentage of the claimed particle size in the initial toner. See M.P.E.P. 2173.05(b).

For example, when the initial toner contains 1.0% by volume of toner particles with diameters of 5.04 μm or smaller, the replenishment toner to be used therewith contains 1.5 to 3.5% by volume of toner particles with diameters of 5.04 μm or smaller. In other words, a replenishment toner containing 0.75% or 5.25% by volume of toner

particles with diameters of 5.04 μm or smaller would be out of the range of the present invention if the initial toner contained 1.0% by volume of toner particles with diameters of 5.04 μm or smaller.

Further, if the initial toner contains 0.7% by volume of toner particles with diameters of 5.04 μm or smaller, the replenishment toner would need to contain 1.05 to 2.45% by volume of toner particles with diameters of 5.04 μm or smaller.

Claim Rejections – 35 U.S.C. § 112

Claim 3 has been amended to be dependant on claim 2. Hence, Applicants respectfully submit that the rejection should be withdrawn.

Claim Rejections – 35 U.S.C. § 102

Claims 1-6 and 8 are rejected as anticipated by Mikuriya (US 5,849,453). The Examiner now relies on Example 2, which sets forth that the volume amount of toner particles having a size of 5.04 μm or smaller is 2.6%. Applicants respectfully request that this rejection be withdrawn.

Applicants respectfully submit that full consideration is not being given to the following feature:

“wherein a percentage by volume of toner particles with particle diameters of 5.04 μm or smaller contained in the replenishment toner is in a range from 1.5 to 3.5 times the percentage by volume of such toner particles contained in the initial toner”.

The relationship between the initial toner and the replenishment toner is critical. The limits of the claimed invention are clear to one skilled in the art, because initial toner amounts are standard knowledge in the art.

Comparing claim 1 to the cited prior art patent, Applicants submit that it is evident that Mikuriya fails to inherently or explicitly disclose this claimed relationship. Example 2 of Mikuriya uses the same initial toner as replenishment toner. Reference is made to col. 17, lines 54 to 56. Therefore, Mikuriya hypothetically only discloses a 1:1 relationship between the initial toner and the replenishment toner by setting forth that the initial toner and the replenishment toner will have 2.6 percentage by volume of toner particles with particle diameters of 5.04 μm or smaller.

Further, Mikuriya Table 4 shows the particle size distribution of this initial and replenishment toner. On the other hand, Mikuriya Table 2 shows the particle size distribution of the collected toner. Applicants believe that the mixture (the toner in the supply hopper) of the collected toner and the replenishment toner in Mikuriya corresponds to the replenishment toner in the present invention. This is based on Figure 3 of Mikuriya because the collected toner collected by the cleaner 47 is fed through the pipe 49 to the supply hopper 42, where the collected toner is mixed with the replenishment toner. The mixture is then supplied to the developer.

Applicants respectfully submit that it can also be understood that, in general, the amount of collected toner transferred to the supply hopper 42 is very small compared with the amount of replenishment toner. According to the inventors of the present invention, the amount of collected toner transferred from the cleaner 47 to the supply hopper 42 is, at best, about 10% of the toner in the supply hopper. Therefore, if it is

assumed that the proportion of the collected toner in the toner in the supply hopper is 10%, then the percentage by volume of the toner particles with diameters of 5.04 μm or smaller contained in the supply hopper is 13.7% ($=13.0 \times 0.9 + 20.1 \times 0.1$). Hence, the ratio of the percentage by volume of toner particles with diameters of 5.04 μm or smaller contained in the supply toner to that contained in the initial toner is 1.05 ($=13.7/13.0$), which greatly deviates from the range defined by the present invention. Conversely, to bring within the range, for example of 1.5 or greater, defined by the present invention, it would be necessary to raise to 91.5% or higher the proportion of the collected toner in the toner of the supply hopper.

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Claims 1-8 are rejected as being anticipated by Sano (US 5,863,694). Applicants respectfully request that this rejection be withdrawn.

Applicants respectfully submit that Sano has similar failings as Mikuriya. The cited prior art patent does not inherently or explicitly disclose the relationship between the initial toner and the replenishment toner. Applicants submit that Sano discloses information regarding only initial toners. There is no disclosure regarding replenishment toners. Hence, a proper anticipation rejection has not been set forth.

Double Patenting

Applicants note that the Office Action details a provisional double patenting rejection, which need not be addressed at this time.

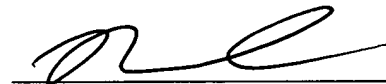
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Applicants respectfully assert that the application should be allowed. If any additional fees are due in connection with the filing of this response, such as fees under 37 C.F.R. §§ 1.16 or 1.17, please charge the fees to Deposit Account No. 02-4300. Any overpayment can be credited to Deposit Account No. 02-4300.

Respectfully submitted,

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Signature:



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